

STAGECOACH WASH
FCD GAGE ID# 4913

STATION DESCRIPTION

LOCATION – The gage location is approximately 1/4 mile south of Stagecoach Pass Road at Pima Road. The gaging equipment is located on the northeast corner of the culvert over the wash. Latitude N 33° 48' 42.8", Longitude W 111° 53' 28.3". Located in NW1/4 S06 T5N R5E, in the Cave Creek 7.5-minute quadrangle.

ESTABLISHMENT – Gaging was established by the District on May 31, 2001.

DRAINAGE AREA – 1.12 square miles

GAGE – A recording PT gage and crest gage is located on the upstream (east) side of Pima Road. Crest-stage gages were installed downstream from Pima Road in 2001, but have not been regularly maintained and their existence and condition are unknown.

The gage is a pressure transducer type instrument. It is located on the upstream side of the culvert on the east side of Pima Road. The PT is at gage height 0.59 feet, levels of June 11, 2001.

There are no staff gages at this location.

There is one crest-stage gage on this wash. It is located at the upstream (east) side of the wash. Elevation is 0.76 feet gage height, levels of March 24, 2005.

ZERO GAGE HEIGHT – Zero gage height is defined as a point below the current streambed at the PT at elevation 2,549.000 feet NAVD 1988. Zero gage height is not defined at the crest gage locations.

HISTORY – No previous gaging at this location. Gaging established on May 31, 2001. CSG replaced in early 2004. There were some improvements made to the approach to the inlet of the Pima Road culverts noted during the annual visit of May 5, 2011.

REFERENCE MARKS –

RM-STGCH is an FCD brass tablet set near the northeast corner of the bridge. Elevation 2,554.147 feet NAVD 1988 or 5.15 feet gage height, levels of June 11, 2001. Northing 1022937.335 feet; Easting 707757.361 feet.

RM-1-CSG-SC is a 1/2" rebar located near the left bank crest gage. This reference point is used at the crest gage location. Elevation is 2,539.789 feet NAVD 1988, or 39.79 feet

gage height (CSGs) levels of June 11, 2001. Northing 1023008.237 feet; Easting 706972.09 feet.

Indirect measurements could be done at the three monumented cross sections at and below the crest gages.

Crest gage XS1 is located at the crest gages. XS1-CSG-LB is rebar with elevation 42.47 feet. XS1-CSG-RB is rebar with elevation 44.74 feet.

Crest gage XS2 is located about 170 feet downstream from XS1. XS2-CSG-LB is a mark on the ground at elevation 37.03 feet. XS2-CSG-RB is a mark on the ground with elevation 37.69 feet.

Crest gage XS3 is located about 270 feet downstream from XS2. XS3-CSG-LB is a mark on the ground at elevation 32.65 feet. XS3-CSG-RB is a mark on the ground with elevation 33.96 feet.

Cross sections two and three should have the end point permanently marked with rebar or some other device.

CHANNEL & CONTROL – The channel is natural both up and downstream from the gage at Pima Road. There may be some encroachment on the left bank downstream from Pima Road, but it is mostly natural. The channel bottom width is about 60 feet both up and downstream. At about 800 feet downstream where the crest gages are located the channel contracts significantly and becomes very straight and contained. Just downstream from the bridge, the channel becomes very wide.

The passage under Pima Road is a small culvert about 18 feet wide and about 3 feet deep. The amount of water that can pass through the culvert is very limited and will cause overtopping of Pima Road during significant events.

At the PT gage, the control is the small culvert to about 3 feet gage height. Above about 5 feet gage height, weir flow controls as the water begins to flow over Pima Road. After about 7 feet, the weir is submerged.

RATING – The current PT rating is Rating #1. The rating is a combination of an HY-8 culvert analysis and an HEC-RAS model for the flows over Pima Road. Both ratings were combined into a single rating.

The rating for the crest gages is also its first. The rating was developed from survey data and an HEC-RAS analysis of the three cross sections.

DISCHARGE MEASUREMENTS – Direct measurements are possible at low flows below Pima Road. Indirect measurements should be done in the reach at the crest gages.

POINT OF ZERO FLOW – The PZF at the PT gage is at about 0.60 feet gage height, levels of March 24, 2005.

FLOODS – A significant flow occurred on July 31, 2007 with a discharge of 802 cfs and peak stage of 5.10 feet gage height.

REGULATION – No known regulation

DIVERSIONS – No known diversions

ACCURACY – The ratings are considered poor to fair until flow measurements are obtained.

JUSTIFICATION – Monitor flows in Stagecoach Wash for City of Scottsdale flood warning system.

UPDATE - July 21, 2011
 D E Gardner